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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,024	03/22/2005	Gary W Grant	160-67031-02	8779
24197	7590	08/23/2006	EXAMINER	
KLARQUIST SPARKMAN, LLP 121 SW SALMON STREET SUITE 1600 PORTLAND, OR 97204			TRAN, CHUC	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/529,024

Applicant(s)

GRANT ET AL.

Examiner

Chuc D. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-44 is/are allowed.
- 6) ☒ Claim(s) 1,2,11-13,17 and 45 is/are rejected.
- 7) ☒ Claim(s) 3-10,14-16 and 46-48 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/22/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 21-28 are objected to because of the following informalities:

Claims 21-28, line 1, "the multiband antenna" has been changed to - - a compact, vehicle mounted antenna - -.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Wong et al (USP. 6,850,196).

Regarding claim 1, Wong discloses a compact antenna in Fig. 1, comprising:

- a base (5) having an upper surface, the upper surface of the base being at least partially covered with a conductive material (10), thereby forming a ground plane (Fig. 1); and

an antenna element positioned on the upper surface of the base, the antenna element comprising:

- a platform (40) substantially parallel to and spaced apart from the ground plane (Fig. 4),
- a ground (20) connecting the ground plane to an end of the platform, the ground extending from the ground plane at an angle substantially perpendicular to the upper surface

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of the base (Fig. 1), and

- a feed (44) connecting the base to the platform, a portion (44b) of the feed being slanted relative to the base as the feed extends from the base toward the platform (Fig. 5).

Regarding claim 2, as applied to claim 1, Wong teaches that a distance between the ground plane and the platform is larger than a corresponding distance in an equivalent planar-inverted -F antenna (Fig. 1).

4. Claim 17 is rejected under 35 U.S.C. 102(e) as being anticipated by Umehara et al (USP. 6,774,849).

Umehara, discloses an antenna element for use in a compact antenna in Fig. 3, comprising:

- a single conductive strip, the conductive strip being bent and overlapped to form a platform (1A), a sloped segment (11a), and an approximately vertical segment (1b) (Fig. 3), the conductive strip being configured to transmit and receive electromagnetic transmissions in a predetermined band (Col. 1, Line 9).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al in view of Munson et al (USP. 6,133,883).

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Regarding claims 11-13, Wong et al disclose a compact antenna as set forth in the claims except an additional (GPS) receiver antenna element positioned on the upper surface of the base. Munson discloses a compact antenna in Fig. 12, comprising the (GPS) receiver antenna element (211) positioned on the upper surface of the base (Munson, Fig. 12). It would have been obvious to one having ordinary skill in the art to modify Wong's antenna by adding the additional (GPS) receiver antenna element on the upper surface of the base as taught by Munson, doing so would for exchanging the high frequency at relatively low power and over short ranges (Munson, Col. 1, Line 27).

7. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stoiljkovic et al (USP. 6,448,932) in view of Munson et al (USP. 6,133,883).

Regarding claim 45, Stoiljkovic et al disclose a communicating antenna in Fig. 3, comprising: a first antenna element (16) for communicating over a first wavelength range (Col. 1, Line 55); a second antenna element (56) for communicating over a second wavelength range different from the first wavelength range (Col. 1, Line 55), the second antenna element being separated from and in general axial alignment with the first antenna element (Fig. 3). However, Stoiljkovic et al is silent on a third antenna element positioned between and in general axial alignment with the first and second antenna elements. Munson disclose a compact antenna in Fig. 3, comprising the third antenna element (211). Thus, it would have been obvious to one having ordinary skill in the art to modify Stoiljkovic's antenna by adding the third antenna element positioned between and in general axial alignment with the first and second antenna elements as taught by Munson et al. The ordinary artisan would have been motivated to modify

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Stoiljkovic et al in the manner described above for exchanging at relatively low power and over short ranges (Munson, Col. 1, Line 27).

Allowable Subject Matter

8. Claims 18-44 are allowed.
9. Claims 3-10, 14-16 and 46-48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for Allowance

10. The following is an examiner's statement of reasons for allowance:

Regarding claim 18, prior art fails to disclose or fairly suggest in combination with the remaining claimed limitations, a platform having a radiating lip that projects outwardly over an edge of the ground conductor by a predetermined distance, the platform being supported above the ground conductor by a ground and a feed, wherein the radiating lip forms a capacitive coupling with the edge of the ground conductor, the capacitive coupling partially contributing to an impedance of the antenna element.

Claim 19 is allowed since it is dependent on claim 18.

Regarding claim 20, prior art fails to disclose or fairly suggest in combination with the remaining claimed limitations, a conductive feed line electrically coupling a transmission line to the first feed and the second feed, wherein a length of the feed line between the first feed and the second feed creates an impedance such that the second antenna element appears to be substantially an open circuit in the first band.

Claims 21-28 are allowed since they are dependent on claim 20.

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Regarding claim 29, prior art fails to disclose or fairly suggest in combination with the remaining claimed limitations, the first and second antenna elements being positioned on the base such that the outward facing ends of the first and second antenna elements face substantially opposite 10 directions; and at least one additional antenna element positioned substantially between the first antenna element and the second antenna element, the additional antenna element being configured to receive and/or transmit electromagnetic radiation in one or more additional bands.

Claims 30-44 are allowed since they are dependent on claim 29.

11. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest, the antenna element is configured to transmit and receive electromagnetic waves in a band substantially between about 1850 and about 1990 MHz (in claim 3); the angle of the feed is adjusted so that the antenna element has a desired height (in claims 4 and 10); the end of the platform is an inward facing end, the platform further comprising an opposite outward-facing end that extends beyond an edge of the base (in claims 5,8-9); the outward-facing end forms a capacitive coupling with a fringe field at the edge of the ground plane (in claim 6); the first and second antenna elements are oppositely oriented to increase electrical isolation relative to each other (in claim 46); the first and second antenna elements are tuned, shaped, and/or positioned relative to each other to reduce loss of performance (in claim 47); a second feed connecting the upper surface of the base to the second platform (in claim 7); the antenna positioned within a portion of a roof rack of a vehicle, an antenna housing, the housing being located near a rearview mirror assembly of a vehicle (in claims 14-15 and 16; and the signals from the first and second antenna elements are

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communicated as analog signals via a single transmission line to a circuit within the vehicle (in claim 48).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Citation of relevant prior art

Prior art Umehara et al (USP. 6,768,462) disclose antenna and wireless communication apparatus.

Prior art Higashiguchi et al (USP. 5,631,660) disclose antenna module for a portable radio equipment.

Prior art Umehara et al (USP. 6,774,849) disclose antenna and wireless communication device.

Prior art Thiam et al (USP. 6,369,761) disclose dual-band antenna.

Prior art Nishikawa et al (USP. 4,907,006) disclose wide band antenna for mobile communication.

Prior art Shikata et al (USP. 6,914,565) disclose dual band antenna.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D. Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC
August 10, 2006



HOANG V. NGUYEN
PRIMARY EXAMINER